



RAPTOR RESEARCH NEWS

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of South Dakota, Vermillion, S. Dak.
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Editors' Note. As yet we have not caught up on our publication schedule. We are presently working on some administrative changes and on 1970 plans which should result in an expanded program as well as more reasonably prompt publication. These changes and our 1970 plans will receive a full report in our October issue.

Report on Meeting Information Request. All of our members in the U.S. and Canada and some others received an inquiry about a possible R.R.F. meeting this year. Shortly after we sent this we received information on a conference in November at Cornell University organized by Joe Hickey and Tom Cade which caused us to change our plans. Two of your officers and several Advisory Board members will be there and the role of the Raptor Research Foundation will receive active discussion. We have concluded that it will be better if some of the functions of our proposed meeting are taken up at the Cornell conference and that the Foundation hold some regional meetings to provide more opportunity for member participation at discussion forums to organize cooperative activities. Those who returned the request forms will receive further information. Others who may be interested in regional discussions are encouraged to return the forms. The first of these regional meetings will be held at Fort Collins, Colorado, in late November.

Regional R.R.F. Meeting in Colorado, November 29, 1969. We have arranged to have the first of a series of regional meetings following the N.A.F.A. Peregrine Symposium. Our meeting will be at Colorado State University, Fort Collins, Colorado, on Saturday afternoon, 1-5 p.m., November 29, 1969. The following is a tentative agenda: 1) report on the Cornell meeting and its relation to R.R.F.; 2) 1970 publication plans of R.R.F.; 3) reports on breeding projects; 4) planning for population work; 5) review of other areas of raptor research. The agenda may be modified after the Cornell conference. All members and friends who will be at the N.A.F.A. meetings or can get to Fort Collins that Saturday are urged to attend. Everyone on our mailing list will receive an announcement of this meeting along with that of the N.A.F.A. symposium soon.

Symposium on Ecology and Management of Predators. This symposium is part of the 31st Midwest Fish and Wildlife Conference at the St. Paul Hilton, St. Paul, Minnesota, and is scheduled for 9 a.m. to 5 p.m. Wednesday, December 10. "There are 16 papers on topics ranging all the way from the philosophies of predation to predator-prey interactions and predator management."

Important Reprint. We were happy to learn that "Hawks, Owls and Wildlife," by John J. and Frank C. Craighead has been reprinted by Dover for \$3.75.

Notes on Raptor Work. We are grateful to Joe Hickey for the following information.

"Harry Reynolds received his M.S. at the University of Montana this spring with a fine thesis on the golden eagle. Carried out under John Craighead's direction and following two other studies on the same area, this is a fine report on the nesting and productivity of this species in south-central Montana."

"Clayton White worked with bald eagles and peregrines on the Aleutians during the past breeding season."

"Perhaps the outstanding discovery of the year has been Walter Spofford's finding 'several pairs' of Taita Falcons in East Africa. It would appear that Spof has now seen more individuals of this species than all the rest of the world's ornithologists put together--and living or dead!"

"Jerry McGahan, now a student of John Emlen's, has been working on South American condors in Columbia and Peru. Nests of this species are hard to find in the wilderness terrain of these two countries, but some interesting concentrations of the condors can be seen on parts of the Peruvian coast."

The editors hope that members will send in items of interest to all of us.

Information Wanted on Merlins. In an attempt to determine the distribution and status of the Merlin or Pigeon Hawk (*Falco columbarius*), past and present, I am soliciting help. This species has shown an alarming decrease in numbers on the Canadian Prairies. I am attempting to document this decrease, determine the cause, and to determine to what extent it is occurring elsewhere. As little work has been done in this species, I need much basic information.

What is the current status? Have there been any breeding records in the past 50 years in your area? Have you noticed a decrease in the number of Merlins seen since 1960?

Any information you can give me in this regard will be gratefully acknowledged. Thank you for your cooperation. Glen A. Fox, 65 Grange Street, Guelph, Ontario, Canada.

Request for Information on Bald Eagles. A study is being conducted to determine the migration routes of Bald Eagles breeding in Minnesota and Bald Eagles wintering in South Dakota. Both immature and mature birds have been color-marked yellow, green, turquoise, or in combination. Information desired: color and portion of wing or tail that is marked, date of sighting, location, and activity of the bird. Exact time of sighting and name of person making the observation is also necessary. Send information to: Thomas C. Dunstan, Dept. of Biology, Univ. of South Dakota, Vermillion, South Dakota, 57069.

A Comment on a Camera Research Apparatus Applicable to Raptor Research. A camera apparatus was designed in 1968 to enable one to determine the number of eggs and the number and size of nestlings in nests of four birds of prey (Bald Eagle, Osprey, Great Horned Owl, and Red-tailed Hawk) which commonly are in inaccessible portions of trees and, therefore, cannot be examined from the ground or near vicinity. This apparatus was used on four additional raptors (Barred Owl, Goshawk, American Kestrel, and Broad-winged Hawk) during the 1969 breeding season.

A Polaroid Swinger camera was mounted on one of a set of five-foot sections of aluminum tubing by means of a sheet metal carriage that surrounds the camera from the back, top, and bottom and is tripped manually from the ground. The camera gives one an immediate picture large enough and of good enough quality to enable the investigator to count eggs or nestlings, needs only simple light adjustment, and has a built-in flash unit which can be inserted into cavities or used to lengthen the work day. Use of the apparatus minimizes disturbance of incubating birds, lessens the chance of fatally chilling or over heating the eggs or nestlings, eliminates chance of destroying the nest or its contents, minimizes the chance of attack from a defending bird, and eliminates the chance of the investigator falling from the tree.

Copies of a paper titled "A Camera Research Apparatus for Investigating Nests of Cavity or Canopy Nesting Birds" reprinted from December, 1968, *Loon* which gives details of carriage, uses, and photos can be obtained as a service of the R.R.F. by writing to this author. Thomas C. Dunstan, Dept. of Biology, Univ. of South Dakota, Vermillion, South Dakota, 57069.

Slides on Raptors. David W. Howard (Chapin Forest, 10373 Hobart Road, Willoughby, Ohio, 44094) is interested in obtaining slides of raptors for use in talks to school groups. He would be interested in hearing from anyone who has duplicates or copies for sale. He also suggests that the Foundation might provide a useful service to collect slides and sell copies to members. If there is interest in providing slides for such a service or in having such a source, please send a note to this effect to the Secretary (George Jonkel, 1848 Dakota Ave. S., Huron, S. Dak., 57350).

Breeding Project Information Exchange. B.P.I.E. No. 11 was issued July 26, 1969, and consisted of a request by Donald V. Hunter, Jr. (Centerville, S.D.) for summaries of observations and results, both positive and negative, from those working on breeding projects. He indicated a need for specific information on diet and feeding, description of quarters, history of the birds, lighting system and timing, disturbances, and individual characteristics of the birds. He also discussed his female Goshawk which has built a nest and laid an egg but so far a male has not been available.

Continental Osprey Survey. On May 24 a continental Osprey survey was initiated through the Raptor Research Foundation to:

1. Coordinate local individual studies of Osprey on a continental basis.
2. Provide statistical data for analysis on a continental basis.
3. Bring together individual workers for comparative discussions and problem solving.
4. Promote further study of this species with special emphasis on both ethological and ecological relationships between Osprey and man.
5. Provide statistical data from as far back as possible that will be compiled and presented as supporting evidence as to the success of this species.

To date approximately 30 individuals or organizations have been contacted because of past or present interest and research on this species. Thomas C. Dunstan, Project Chairman, reports that the project has been enthusiastically accepted by those concerned at private, state, and federal levels from coast to coast.

The survey includes the study of breeding success, ecology, migration patterns, diseases and parasites, and development of research techniques. Photographs showing nesting ecology and related ecological aspects are being solicited as well as related reprints and unpublished reports. These materials will be housed at the Raptor Research Foundation office and made available to workers for future reference.

Persons interested in contributing to the study may contact Thomas C. Dunstan, Dept. of Biology, Univ. of South Dakota, Vermillion, South Dakota, 57069. Reports for 1969 are due prior to November 15 with data to be compiled by January 15, 1970. All contributors will receive a copy of the progress report of the study. This project demands strict scheduling and due dates must be maintained. Constructive criticism is welcomed at all times and is necessary for a project of this magnitude.

CURE OF TAPEWORMS IN GYRFALCON

by John Lejeune
6474 Wellington Ave. West
Vancouver, B.C., Canada

In February of 1969, I noticed tapeworm segments in the mutes of one of my female Gyr Falcon. From then on, I kept the bird on a screen perch and checked the mutes on the daily removed paper.

The food of the bird which up until then was mostly freshly killed birds (pigeon) was changed to defrosted day-old chicks, chickenheads and occasionally defrosted pigeon.

When the parasites were first noticed, the bird weighed approximately three-quarters of a pound and was from then on fed twice daily until up to the end of April when it weighed over four pounds.

The segments, each 1/8 inch long, were found irregularly and sometimes were missing for approximately eight days. The segments did get smaller in size as the weight of the bird increased; the number of them, however, remained constant and no whole worms were found.

I had the impression that by feeding pigeons there were more segments in the mutes than by feeding chickenheads and day-old chicks of which the bird was particularly after the egg yolk in them. By the end of April, I had some of my other birds sick with a bacterial disease which I have cured previously with Gantrisin Terramycine, and as a precaution gave all my birds one-quarter tablet Gantrisin (125 mg.) plus codliver oil pills.

The above-mentioned Gyr did not show any sign of sickness, but received as a precaution for three days, one-quarter tablet Gantrisin and one codliver oil pill daily. After three days, I found in the mutes approximately twenty tapeworms which seemed to be attached to two pieces of shed lining of the intestines.

The same day, I received from Germany a drug mentioned by Dr. Bruell on page 124 of "Die Beizjagd," by the name of Yomesan, manufactured by Bayer Leverkusen, West Germany. It says in this book, "Dr. Saar gave falcon [assumed Peregrine] by empty crop one-quarter tablet (125 g.) in a piece of meat and had prompt results after twenty minutes." I think that there is a mistake in the book and it should be (125 mg.). This occurs to me, however, as I write this down. I related the (125 g.) to the weight of the bird, which by approximately 2,000 g. should then receive two tablets of 0.5 g. This seemed to me too much, and I therefore did go by the human dose which recommends one tablet for children

under two years. The next day I gave the bird by empty crop one tablet 0.5 g. in a piece of meat approximately one-half to one ounce.

After approximately ten minutes, the bird developed diarrhea and as in Dr. Saar's case, approximately twenty minutes later twenty to twenty-five tapeworms were found dead in the mutes. The longest ones were over five inches mostly with head attached as seen under the microscope. The bird was then fed, and after several hours the mutes started to look perfect. By now, several days after, no bad side effects can be noticed except that the food consumption of the bird has decreased which seemed to point in the right direction. It is felt that the same result can be obtained with a smaller dose of Yomesan.

A quarter tablet was given to another falconer whose bird, a female tundra Peregrine, was suffering from the same malady, and similar results were obtained.

The fact that segments in the mutes will not always be found in a case of tapeworm infestation shows the following experience: I received a two year old male Gyr Falcon in very poor condition. This bird was kept under the same conditions as above. It died after two months. The mutes were constantly checked and no tapeworm segments were ever found. Post mortem revealed the falcon died of air sacculitis and swollen kidneys (nephrosis) and as stated in the report of a qualified pathologist from the Department of Agriculture, "A heavy infestation of tapeworms was present and no other internal parasites could be found."

Therefore I ask. How can a diagnosis of tapeworm be made when no segments are found in the mutes?

If anyone can advise me, it would be appreciated.

FOOT TROUBLE IN GYRFALCON AND ITS RELATION TO
THE SHAPE AND MATERIAL THE BIRD IS KEPT ON

by John Lejeune
6474 Wellington Ave. West
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Pages have been written on the above subject and the theories of the cause and cure center mostly on the type of material the bird is kept on such as rubber, wood, cement, strawbale, cork, etc.

In nature, the bird rests mostly on rock or wood. However, it changes its location more often and since the profile of the resting place is not equal, the pressure of the bird's weight is seldom applied equally to the underside of the bird's foot. Furthermore, as the bird changes its resting position from one foot to the other the warm footpad is suddenly exposed to the extreme cold of the resting-place. I have watched Gyrfalcon in the wild spending approximately seventy-five per cent of their time for several weeks on steel towers without any trouble to their feet.

My opinion was therefore that it does not matter on what type of material the bird stands as long as it can be kept clean easily. As mentioned in an earlier article, I had tapeworms in a Gyrfalcon and therefore kept the bird strictly on a screen perch for two months whose top was built out of an ordinary 2" x 3" douglas fir. The bird's feet were very healthy and it changed frequently from one foot to the other to rest. In order to improve its condition, I got the idea to cover half of its perch with heavy carpet, so the bird could choose between soft carpet or wood. The bird stood then almost entirely on carpet. After approximately fourteen days, I noticed that the bird always rested on both feet, and on inspection of the footpads I noticed a blister type infection one-quarter inch in diameter without any liquid content under each metatarsal pad. In order to relieve the area of infection entirely of the bird's body weight and supply it constantly with fresh air which I think is also important, I designed a perch cover shown in Figure 1.

In a matter of hours, the bird realized the advantage of having the metatarsal pad between the mouldings. The next day it was seen to rest only on one foot. The same oval mouldings were put on a block and the bird placed on the lawn. Here the bird changed its position frequently and stood once parallel with the mouldings and next crosswise. The center of the metatarsal pad was always without pressure. An antiseptic salve was also applied daily in order to prevent bacteria from affecting the area. After approximately four weeks, the footpad was back to normal. I think that this is the only design where it is possible to have the

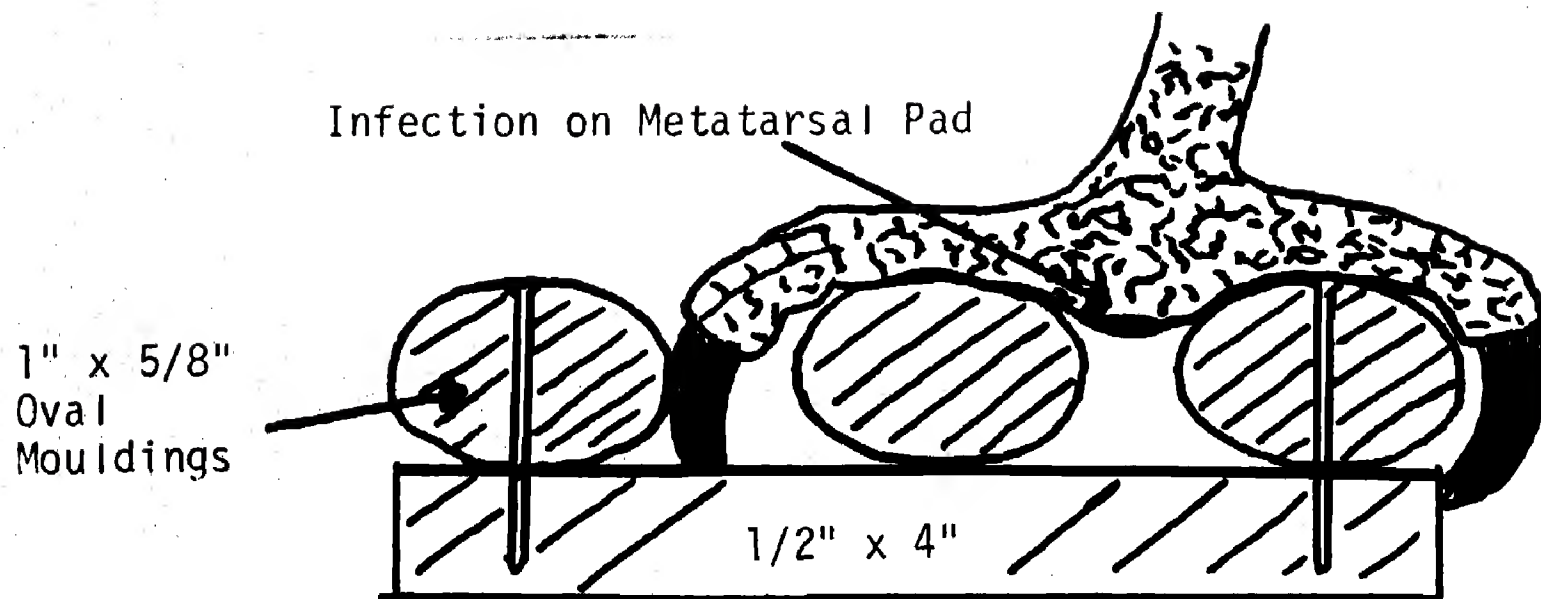


Figure 1. Special perch for falcon with infected feet.

metatarsal pad entirely relieved of the body weight and the weight in a slowly increasing way applied to the remaining areas of the foot. It is my opinion that this is a basic necessity to prevent and in particular to cure any trouble of this nature, and since it is fairly common, I hope that it will be of value to many of the readers.

This incident also seemed to point out that a soft perch is detrimental to the normal foot health of the bird.

RAPTOR POPULATIONS COMMITTEE REPORT FOR 1968

by Don Adolphson
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Information in this report is from 1968 unless stated otherwise. We wish to thank the contributors from the various states. The states are listed alphabetically and species reports thus are at random throughout. Canadian province information follows the state reports.

Hopefully this information can be followed in the future by additional reporting from more locations. We think this will acquaint some of you with other workers' information and encourage you to cross-change information.

Alaska, southeast (Bald Eagle). Observer: U. S. Departments of Interior and Agriculture.

The Bureau of Sport Fisheries and Wildlife--Department of the Interior and the Forest Service--Department of Agriculture, have signed an agreement to insure greater protection for Bald Eagles of southeast Alaska, where the largest numbers of this species live. Terms of the agreement will be carried out through the regional forester for the Forest Service and the game management agent in-charge for the Bureau of Sport Fisheries and Wildlife. Both are stationed in Juneau.

The major feature of the agreement is the close cooperation of the two agencies in protecting nest areas where timber sales, road construction or other operations by man are planned. The Bureau of Sport Fisheries and Wildlife will locate and mark all eagle nesting trees within and adjacent to eagle nesting areas. The Forest Service will include clauses and specifications in timber sale contracts and special use permits to protect nest trees from destruction.

The population of nesting Bald Eagles in southeast Alaska was estimated by the Bureau of Sport Fisheries and Wildlife at between 10,000 and 15,000 after a survey of nests in 1966. The total number of Bald Eagles is unknown; 2,772 were counted in the 48 contiguous states in a wildlife study conducted earlier this year.

Southeast Alaska offers some of the most desirable Bald Eagle habitat with its 13,000 miles of salt water shoreline and its rain forests of sitka spruce and western hemlock in the lower elevations. During the 1966 survey, almost all Bald Eagle nests were

located within 200 yards of salt water or along major mainland rivers.

Although this area has not yet been extensively marred by man, it has not been untouched. Between 1785 and 1910, Sea Otters were exterminated in southeast Alaska. Salmon fishing began about 1878 and decline in salmon stocks began to be noticed during World War II. In recent years, pesticides have been used in a few isolated areas.

Bounty hunting, too, once menaced the Bald Eagle. Alaska was paying \$2 per bird when the bounty system was rescinded by the territorial legislature in 1952. Annual reports of the Alaskan territorial treasurer showed that 128,273 bald eagles were killed and presented for bounty from 1917 to 1951.

Alaska, interior. James H. Enderson reports that nesting of Peregrine (about 30 nests seen) and Gyrfalcon (about 7 nests seen) were about normal on two of the rivers in Alaska. No specific data yet available.

L. G. Swartz states that spring migration in 1967 was poor for all species but 1968 was very good. Migration is variable from year to year in the Fairbanks area, but in 1968 Marsh Hawks and Harlan's Hawks were very abundant, closely followed by Rough-legged Hawks, Goshawks, Kestrels, and Peregrines. Merlins were not very abundant and Sharpshins were uncommonly seen. Sharpshins were observed during the breeding season but no nests found. Two nests of Merlins found with one nest containing two eggs when deserted and the other nest fledging five young. Nestings of Harlan's were normal with one nest found fledging three young.

Alaska, except southeastern portion. David Roseneau, Anchorage, sent the following report: The Peregrine Falcon population is apparently stable during migration and seems to remain stable during nesting with about 1.5 young fledged per nest. Pigeon Hawks population is good during migration and nesting and Harlan's Hawk is probably normal to former years during nesting. Goshawks may be on the upswing due to increase in food supply (hares and ptarmigan) in some areas. Rough-legged Hawks are remaining about the same with 35 nests having two to six young and averaging about four young fledged per nest.

Colorado, north-central area. Carl D. Marti reports nesting Great Horned Owls (13 nests, 2.40 young per nest), Barn Owls (4 nests, 4.80 young per nest), Burrowing Owls (19 nests, 3 to 8 young per nest), and Long-eared Owls (3 nests, 3 young per nest).

Colorado and Southern Wyoming. James H. Enderson comments that Prairie Falcons are normal from former years during the winter and the nesting season (35 nests average about 1.5 young per nest). Ferruginous Hawks seem to be decreasing from former years during migration and are up slightly from previous years,

but still way down during nesting (four nests found but no data on success). Peregrine Falcons nest in only a few very old and favorable localities and were normal to former years at time of visit (seven nests but fledging not known). Golden Eagles normal from former years during migration and nesting (about 12 nests, no data on young).

Connecticut (Osprey). Researchers at the Patuxent Wildlife Research Center studied Osprey nesting success in Connecticut this spring. They believe that embryos from Connecticut may have been killed by some pollutant obtained by the adult from its environment and passed on to the eggs. Each embryo died as yolk was being drawn into the body. A colony near the mouth of the polluted Connecticut River has declined from 150 to 10 nesting pairs in the last 14 years.

Renowned ornithologist Roger Tory Peterson predicts that if the rate of decline continues, fish hawks will be gone from Connecticut by 1971--and he suspects pesticides may be responsible.

Florida, south. E. A. Dieffenbach reports Red-tailed Hawks seen to be increasing from former years during the migration periods. During 1968, of the three nests found, one fledged three young, one nest destroyed by fire, and the other nest had two eggs that did not hatch because of pesticides in the eggs.

Florida, central east coast. Lon E. Ellis states that during migration all raptor species were down from former years except Red-tailed Hawks. Cooper's and Sharpshin Hawks were very low. During the nesting season Osprey (11 nests, one young per nest), Short-tailed Hawk (one nest, 0 young), Cooper's Hawk (no nest found), Bald Eagle (six nests, 0.50 young per nest), Great Horned Owl (one nest, one young) and Barred Owl (one nest, one young) seen to be decreasing from former years. Nesting Red-tailed Hawks (six nests, 1.20 young per nest) and Red-shouldered Hawks (ten nests, 2.50 young per nest) were normal with former years. Kestrels raised an average of 1.50 young per nest from three nests.

Iowa. Kurt Ohlander, Des Moines, reports that the number of Red-tailed Hawks are about normal during migration (a few more seen during fall) and nesting (two nests, average of two young per nest fledged). Sparrow Hawks were normal during migration periods and nesting with one nest fledging three young. More Sharpshin Hawks were seen during fall migration than usual and spring migration was about normal. Harlan's Hawks seem to be increasing during migration periods. The Peregrine Falcon is definitely becoming more rare in Iowa with sections of the state which used to hold six or eight eyries now decreased to one or two eyries. Eagles are common in some sections of the state, from late fall to early spring. Cooper's Hawks were normal during migration periods and nesting with one nest fledging three young.

Illinois, west shore Lake Michigan area. Mahlon K. Mahoney sent in the following report of the 1967 migration at Max McGraw Wildlife Foundation, located 45 miles northwest of Chicago, Illinois.

Hawk Migration Data, 1967

Species (First/Last)	No. Seen	Monthly Percentage of Total Seen											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sharp-shinned (5/17 10/14)	4					25				50	25		
Cooper's (4/19 9/6)	3				33	33				33			
Red-tailed (All Year)	212	5	6	10	4	6	3	4	7	10	16	17	12
Red-shouldered (All Year)	39	10		3	8	15		15	21	21	5	2	
Broad-winged (4/15 12/5)	13				46	23			8	8			15
Rough-legged (1/16 12/27)	17	6									12	35	47
Marsh (1/16 11/7)	4	25			25						25	25	
Osprey (4/15 10/12)	4				75						25		
Falcon, Per. (8/22 12/19)	4								25		25		50
Hawk, Sparrow (All Year)	9			22	11	11			11		11	12	11

From Dillon, "A Bird Census on a Restricted Site in Northeastern Illinois," *The Audubon Bulletin*, Number 146, June 1968: 17.

Massachusetts, Westport River and Sloceen River, 1967 and 1968 (Osprey). Jo and Gil Fernandez report that they have been conducting a survey of Osprey in the last nesting site in Massachusetts for five years. In 1967 there were 16 pair which produced 8 young. In 1968 there was an increase to 22 pair back and Rhode Island had 3 young produced for the first time in many years. The Osprey in Massachusetts used 21 nests and had an average of 1.09 young per nest. There were 30 young in 12 nests, 8 nests had eggs no young and one nest no eggs or young. The increase in production was probably due to new pairs returning and protection from predators by placing metal guards around nesting trees. Complete nest failure occurred in those nests which had failed before and may be due to pesticide residue or thin-shelled eggs due to pesticides. The rivers have only slight pollution. Nest platforms are going to be erected to replace trees blown down this year.

Michigan (Bald Eagle). Observer: Sergej Postupalsky, Royal Oak, Michigan (Information from *North Woods Call*, Roscommon, Michigan).

In 1968 there were 84 active nests with 27 nests in the lower peninsula and 57 in the upper peninsula. One of the most productive nests in the lower peninsula may be lost this year (1968) as a result of tree cutting operations.

In 1967 the entire Bald Eagle breeding population numbered just over 100 pairs, with most in the upper peninsula. Only 51 known eaglets were raised last year in 93 active nests.

Postupalsky notes a "very significant difference in reproductive success" between nests near the shores of the Great Lakes and those inland. Only one of the 17 Great Lakes nests was productive last year. Inland areas showed 34 successful pairs out of 75 which nested.

Research indicates that residues from "hard pesticides" such as DDT, in the Great Lakes, is gradually rendering eagles sterile. Since the buildup in pesticide levels in Great Lakes fish is now assuming serious proportions, eagles which feed on fish are among the first to show the effects.

The Royal Oak man feels, however, that shooting is still the greatest single cause of mortality among adult eagles. "A few eagles, particularly young birds, get caught in traps," he said. "Beaver and otter sets are particularly dangerous because they are set to drown their victims." Those caught in land traps can usually be released. Bald eagles continue to decline, says Michigan's foremost expert on the big birds.

Michigan, state-wide (Osprey). Observer: Sergej Postupalsky, Royal Oak, Michigan (Information from *North Woods Call*, Roscommon, Michigan).

There were 61 active nests located this spring (1968) with 36 of them in the upper peninsula. In 1967 there were 64 located. Artificial platforms, designed and paid for by Stephen M. Stackpole, of Grosse Pointe Shores, an Audubon member, were placed in Fletcher Floodwaters for two winters. Fifteen pairs of birds were nesting in the Alpena County water with 13 of them using the platforms. The highest previous count was 13 in 1964. At the Deadstream Swamp on the Missaukee-Roscommon County line, six pairs of Osprey are nesting and five pairs are using the platforms. Osprey, an endangered species in Michigan, slipped badly in the nesting season at Fletcher Floodwaters, the major stronghold in northern Michigan. The 15 active nests which contained 41 eggs in late spring, resulted in a successful hatch of only 11 birds, according to Al Valentine, president of the Alpena Thunder Bay Audubon Club. Hopes were high in the spring when 13 pairs built nests on special metal platforms that are predator-proof and were put up by the

Audubon Society in the 12,000 acre flooding in Montmorency and Alpena counties. Pesticides are suspected as the cause of the low hatching success.

Michigan, central. G. T. Wallace reports that Sharpshin Hawks, Cooper's Hawks and Red-shoulder Hawks were down from former years during the spring and fall migration. During fall migration Red-tailed Hawks were up from former years. Accipiters, Red-shoulder Hawks and Barred Owls are decreasing in nesting but Red-tailed Hawks are increasing.

Michigan, Leelanau County 1964-68. William C. Scharf reports that in a four year spring migration study, substantiated by data which he will get into print, Kestrels are decreasing from former years; Turkey Vultures, Broadwing Hawks and Red-shouldered Hawks are increasing and Red-tailed, Goshawk, Sharpshin and Cooper's are about normal. The Osprey and Bald Eagle are no longer the common nesting species they once were and the Peregrine and Merlin never were common.

Michigan, Minnesota and Wisconsin (Osprey). Observer: Ernest Swift, *Michigan Out-of-Doors*, June, 1968.

In 1966 the North Central Audubon Council conducted a study of the Osprey in Michigan, Minnesota, and Wisconsin. To the unscientific mind, one factor shows up in the report. Of 237 Osprey nests located, 148 were active. The increase averaged out .37 young per nest. In regions where Osprey were more prosperous, the clutch will be three eggs. In other words, instead of 55 young from 148 nests, the number should approach 500.

And if there are 500 nests, which in all likelihood the region could support, the total young would be 1,500. A potential of 1,500 young instead of 55 . . . no wonder the Osprey and other birds are disappearing.

Further observations were: "Our present indications are that the Osprey population is very rapidly declining. Not only are the birds reproducing very poorly but few adults are actually present to reproduce. A total of 291 adults were seen in the midwest during the summer of 1966. Because of the few adults seen, there is a very poor probability that the Osprey population will be able to pull itself out of its decline, even if the birds can raise up to three young per nest."

"One of the main reasons for this decline of our birds of prey is the fact that very few of the young are raised each year. The reason is still a mystery."

The reasons apparently contributing to the decline are: poisons in the fish that kill the birds or make their eggs infertile; water pollution and subsequent lack of suitable food

fish in waters near nesting sites; decline of suitable nesting areas; animal or bird predation, and shooting, sometimes by well-intending persons who think they are protecting other animals.

Minnesota (Summary of Bald Eagle-Osprey Status Report, 1968).
Chippewa National Forest, Cass Lake, Minnesota. John E. Mathisen,
Wildlife Biologist.

Bald Eagle and Osprey nesting populations of the Chippewa National Forest have been evaluated for the sixth consecutive year. Since we were able to use an airplane for both Eagle and Osprey observations, our data are more complete than for any previous year. The Osprey flights were made possible through the excellent cooperation of the Bureau of Sport Fisheries and Wildlife.

The nests were observed twice from the air. The first check, during the incubation period, indicated if the nest was occupied. The second check of previously occupied nests showed if young were present. In no case were incubating birds unduly alarmed by the aircraft, and only one or two flushed from the nest.

Bald Eagle Nesting Data, 1968

District	Known Nests	Observed Nests	Active Nests	Successful Nests	Number of Young
Bena	37	26	14	7	11
Blackduck	11	9	6	5	11
Walker	14	12	4	4	7
Remer	8	4	3	2	3
Marcell	10	7	4	3	3
Cass Lake	36	25	12	7	9
Cut Foot Sioux	26	22	9	5	6
Forest Total	142	105	52	33	50
Percent		74%	49%	63%	1.5/nest
Projected Forest Total			69	43	64

For the first time we have fairly reliable evidence of the wintering area of Chippewa eagles. Mr. Frank Ligas of the National Audubon Society trapped and color-marked wintering eagles in Union County, Illinois. Four reports of color-marked eagles on the Chippewa were received during the first part of April. Five nestlings were banded by Dr. Al Grewe and a student assistant.

Comparison of Bald Eagle Nesting Data, 1963-1968

Year	Known Nests	Observed Nests	Active Nests* No.	%	Successful Nests No.	%	Young Per Nest
1963	48	31	20	64	6	30	1.7
1964	55	46	30	65	12	40	1.2
1965	76	58	39	67	22	56	1.3
1966	107	70	52	74	19	61	1.5
1967	135	67	49	73	21	55	1.4
1968	142	105	52	49	33	63	1.5

*Only active nests with known outcome were used for calculating nesting success.

Twenty-one new Osprey nests were found since the 1967 survey. Eight had blown down since last observed, bringing the total number of known osprey nests on the Chippewa to 73. There are undoubtedly many more Osprey nests to be located. They are difficult to find compared to eagle nests and their preference for dead trees makes an up-to-date inventory exceedingly difficult because they are prone to wind destruction.

Results of Osprey Survey, 1968

Known Nests	Observed Nests	Active Nests No.	%	Successful Nests No.	%	No. of Young	Young Per Nest
73	56	40	71	13	32	19	1.5

Although a large proportion of the Osprey nests were occupied (71%), the success rate was quite low (32%). Seven of the unsuccessful nesting attempts were a result of blowdown, but the other twenty were from unknown causes.

Projection of these data to include all of the 73 nests indicates only 25 young Ospreys were produced in 1968.

Minnesota, northern area. Thomas C. Dunstan compiled the following table on nesting Osprey from eleven counties including the Chippewa National Forest.

Osprey Nesting Success in Minnesota from 1963-68

Year	Known Nests	Obs. Nests	Active Nests		Successful Nests		No. of Young	Brood Size	Blow- downs
			No.	%	No.	%			
1963	16	16	14	87.50	14	100.00	21	1.50	1
1964	21	15	13	86.66	13	100.00	22	1.69	0
1965	29	15	15	100.00	14	93.33	23*	1.64	1**
1966	58	23	22	95.65	19	86.36	25	1.35	3
1967	119	98	60	61.22	36	60.00	59	1.64	8***
1968	132	107	79	73.83	50	63.29	81	1.62	8****

*not including one electrocuted nestling

**active

***five active

****seven active

Montana. John Seidensticker reported that the Cooperative Wildlife Research Unit personnel, under the direction of Dr. John Craighead, are in the process of preparing technical papers on the status and breeding biology of the Red-tailed Hawk, Great-horned Owl, Golden Eagle, Peregrine Falcon and Prairie Falcon in south-central Montana.

New York, southeast and Bergen County, New Jersey. Stiles Thomas reports that the Red-shouldered Hawk is apparently gone as a breeding bird from Bergen County, New Jersey, and the Barred Owl is gone altogether.

The Fyke Nature Association's 10th Annual Hawk Watch, 1968 at Mt. Peter, New York (elevation 1,200 feet), counted 7,183 raptors during 18 days of observation in September, 1968. The Quarry in Upper Montclair counted 6,903 Broad-winged Hawks and 8,031 total through the 29th, in 23 days of observation. The table on the following page gives results by species for September of 1968 and former years at Mt. Peter.

New York (Observations of Falcons and Hawks in Allegany and Stueben Counties, New York). James T. Ross, 118½ Hornell St., Hornell, New York, 14843.

The following report gives an account of migratory and resident raptors observed by the author from September, 1967, through June 27, 1968. The report was submitted to Alfred University, Alfred, New York.

Falcons

Peregrine (*Falco peregrinus*). One sighting during fall migration, October 15, Bath, New York. Immature female.

Summary of Mt. Peter Hawk Watch, 1968

September, 1968													
Date	Shp Sh	Coo per	Red T	Red Sh	Brd Wing	Bld Egl	Mar sh	Osp rey	Per Fal	Pig eon	Spar row	Un Id	Total Hr
1968	85	11	43	12	6645	-	26	56	3	1	235	66	7183
1967	33	4	43	6	756	-	18	30	-	-	130	43	1063
1966	29	7	18	1	1321	-	18	46	-	-	280	22	1743
1965	162	21	37	9	1508	-	30	128	3	2	401	69	2370
1964	116	12	19	-	3489	4	16	86	-	-	101	48	3891
1963	62	7	19	2	1428	-	29	31	-	2	199	74	1852
1962	44	8	8	12	3701	-	16	58	3	1	157	32	4030
1961	37	5	29	5	1113	1	23	12	1	2	68	38	1347
1960	61	2	9	-	1293	1	8	24	-	-	55	70	1528
1959	-	-	-	-	-	-	-	-	-	-	-	-	1781

October and November, 1968																	
Date	Gos	Shp Sh	Coo per	Red Tld	Red Sh	Brd Wing	Ro Leg	Bld Egl	Gld Egl	Mar sh	Osp rey	Per Fal	Pig eon	Spar row	Un Id	Tot	Hr
1968	-	244	7	269	50	13	-	-	1	32	24	1	3	98	62	803	116½
1967	1	127	2	108	7	61	1	-	-	15	10	4	5	134	62	537	74½
1966	1	135	18	195	43	72	-	-	-	21	14	1	3	258	26	787	83
1965	-	206	18	161	53	24	-	1	-	36	17	1	1	72	65	654	

Season Totals (August-November)																	
1968	-	327	18	312	62	6658	-	-	1	58	80	4	4	333	128	7986	258½
1967	-	160	6	151	13	817	1	-	-	33	40	4	5	264	105	1600	201
1966	-	164	25	213	44	1393	-	-	-	39	60	1	3	538	48	2530	197
1965	-	368	39	198	62	1532	-	1	-	66	145	4	3	473	134	3025	202

Merlin (*Falco columbarius*). Two sightings, mature male, April 15, immature female, November 30. Both birds were probably on passage.

Kestrel (*Falco sparverius*). This bird is a permanent resident in counties and can be described as being fairly abundant. One nest was observed in which a brood of four were hatched. Most observers in this area feel that it is decreasing in numbers, however.

Accipiters

Goshawk (*Accipiter gentilis*). The author was given a mature female Goshawk that had been shot off a nest during spring turkey season. The location of the nest is Canastota, New York. There are supposedly no other records of breeding birds in this county (Steuben) for the last 10 years. Another nest was located near Palmers Pond and was reported to be active for two years prior to this spring; however, upon searching the area the nest tree (Beech) had been cut down. After talking to several residents this writer feels that the Goshawk is more common than imagined in this county. It is more often simply labeled a Cooper's Hawk.

Cooper's Hawk (*Accipiter cooperi*). This hawk seems to be rapidly disappearing from the area. Only one active nest was found after extensive searching. At this site the writer was unable to make a brood count. The parent birds appeared to be preying exclusively on starlings and grackles as these feathers were found in abundance throughout the surrounding area.

Sharp-shinned Hawk (*Accipiter velox*). No sightings or evidence of nesting in this area.

Buteos

Red-tail Hawk (*Buteo jamaicensis*). A local resident found in abundant numbers throughout both counties. This writer observed 12 nests of which only five were active for this year. In all nests the usual brood count of two was observed save for one nest which had three young--two females and one male.

Broad-wing Hawk (*Buteo platypterus*). According to some authorities, this hawk is becoming more abundant in the eastern states. It has been recorded nesting on the northern borders of Pennsylvania but at this time no nests or birds were observed in this area.

Red-shouldered Hawk (*Buteo lineatus*). Said to be fairly common; however, I recorded it only once in the field and found no evidence of nesting in this area.

Osprey

Osprey (*Pandion haliaetus*). This hawk can be seen with some certainty in the vicinity of the Almond Dam. No evidence of nesting in the surrounding area can be found, however.

(Editors' Note: Mr. Ross would like any information any reader has on Merlin's as a breeding bird in New York State.)

New Jersey. Greg K. Ivins states that nesting Red-tailed Hawks (3 nests, 1.33 young per nest); Sparrow Hawks (1 nest, 2.00 young per nest); and Screech Owls (1 nest, 2.00 young per nest) are about normal as compared to former years. Long-eared Owls (6 nests, 0.83 young per nest) and Barn Owls (2 nests, 0 young) seem to be decreasing in nesting.

New Jersey (Osprey). Area--7 mile Beach, Cape May County; observer: Joseph A. Jacobs, 1928 Hillcrest Avenue, Pennsauken, New Jersey.

Forty-four nests had incubating birds this season (1968). These 44 pair raised 10 young, two nests raised 2 each and 6 nests raised 1 each. My observations indicate that this population is having a difficult time finding enough food.

New Jersey (Bald Eagle). Area--Cumberland County. Observer: Joseph A. Jacobs, 1928 Hillcrest Avenue, Pennsauken, New Jersey.

This season there were only 2½ pair of Bald Eagles present during nesting season in all of New Jersey, all in Cumberland County.

One pair hatched 1 young but two weeks later the nest was deserted and the birds were not seen again. This pair of eagles have experienced this same fate before. This nest is in a remote area and I never saw any sign of human disturbance.

The other pair didn't nest; at least I failed to find a new nest and although I saw them in the vicinity of their old nest, they didn't use it.

The single bird maintained a nest and was always seen near it or on it for ten weeks when she found a mate--too late for this season. The two birds remained at the nest site for two weeks, long enough, I hope, to imprint the new mate with the site.

All my observations are made through a 30X Balscope. I never disturb any of the birds I observe. I never approach the nest trees until the birds are finished for the season, or in the case of the Osprey until the young are nearly ready to leave the nest; then I band them.

Pennsylvania, southeastern. Robert B. Berry states Cooper's Hawks were common breeding resident in late 40's but last known nest found was in 1954. There has been no summer record since then. They are occasionally seen during fall migration and are rarely seen during winter months. A male immature was sighted on January 9, 1969, which is the first one seen for several years.

South Dakota, southeastern area, 1968. Thomas C. Dunstan reports that 11 Great-horned Owl nests had an average of 1.90 young per nest which is considered a normal year.

South Dakota, western. Tony Luscombe banded an average of 4.5 young Prairie Falcons in six nests. New nests were found in the area for the first time in four years.

South Dakota, western half. Observer: Don Adolphson

Swainson's Hawk--Eleven nests were found during the 1968 season. Ten nests were successful and fledged an average of 2 young per nest.

Red-tailed Hawk--Twenty nests fledged an average of 2.5 young per nest. One of the nests was located on a cliff in the Badlands and the others were in trees.

Ferruginous Hawk--Three nests fledged an average of 2.66 young per nest. One nest was located on a haystack, one on a sand dune, and the other 20 feet high in a cottonwood tree.

Golden Eagle--USFW found 21 nests that fledged 35 young in Butte and Harding Counties, South Dakota. Eagles were also fledged from 10 nests in Stanley, Lawrence, Meade, Pennington, Custer and Fall River Counties.

Marsh Hawks--Six nests were found and only two were successful. One fledged four young and the other five young. The other nests were drowned out in June because of heavy rains.

Great-horned Owl--Twenty-six successful nests were located in western South Dakota and fledged an average of 1.96 young per nest. One nest had four young, 4 nests had three young, 14 nests had two young and 7 nests had one young. Four other nests were unsuccessful.

Short-eared Owl--One nest was found in a sage brush clump in Butte County. The nest had 5 eggs but only fledged one young.

South Dakota, eastern half. Observer: George Jonkel

Swainson's Hawk--Thirty-one nests were found. Seven of these were successful and fledged 16 young. Of the 24 nests not successful, most had blown down from wind up to 115 miles per hour over much of the area under observation. Swainson's seem to be the

most common nesting hawk in eastern South Dakota. The best time to band young Swainson's in South Dakota is about the middle of July. No nests were visited before that time but were observed from a distance.

Red-tailed Hawk--One nest was located and fledged one young.

Ferruginous Hawk--Two tree nests and two ground nests were located. The tree nests were not successful but the ground nests fledged. One had three young and the number in the other was not known. The best time to band young Ferruginous Hawks in South Dakota is about July 1st.

Marsh Hawk--One nest was located and was not successful.

Great-horned Owl--Of four nests located, two were successful and fledged a total of three young.

Texas, Panhandle. Doug Grayson, White Deer, Texas, sent the following report. During the 1968 fall migration there were not as many Red-tailed Hawks seen as usual but many more Prairie Falcons were seen. During the nesting season about 35 raptor nests were checked. The Red-tails fledged about one young per nest and the Swainson's Hawks fledged about four to five. There were not as many Red-tails and Great-horned Owls nesting as in former years but Swainson's and Ferruginous Hawks were increasing in nesting. Sparrow Hawks nesting is about normal to former years and one Golden Eagle nest was spotted. Red-tails are becoming scarce in the area with Swainson's and Ferruginous taking over the old Red-tail nests and areas.

Wisconsin, statewide. Observer: North Central Audubon Council

The Osprey survey in 1967 located 75 known pairs. Nesting success falls below the normal, or pre-pesticide levels.

Canada, Hudson Bay Area. Charles Jonkel reports in the Hawley Lake (or Sutton Lake), Ontario, near Hudson Bay Coast, Winisk, a Bald Eagle nest and a Golden Eagle nest 100 feet from the Bald Eagle nest, were observed in Hawley Lake gorge by John Hopkins and Roger Wolfe. No young fledged from the Bald Eagle nest but two young Golden Eagles were observed the first week of July. Local Indians say that this is the first time that Bald Eagles have been seen at Hawley Lake.

At North Twin Island, James Bay, Charles Jonkel and Brian Knudsen found Jaeger and Rough-legged Hawks, rare during July, 1968. Some owl pellets found, but no owls seen.

At Cape Churchill, Manitoba, Charles Jonkel found during September and October, 1967, that Snowy Owls were very abundant (five to eight could be seen most days along a 20-mile road) but

no Gyrfalcon were seen. During September, October and November, 1968, Snowy Owls were not as abundant (two or three seen most days) but three white phase Gyrfalcon were seen. Lemmings and Ptarmigans seemed equally abundant in both 1967 and 1968. Both species seem to be near the peaks of their cycles (if they have cycles) or at best, were quite abundant.

At Cape Henrietta Maria, Ontario (from Hook Point to Winisk), Charles Jonkel and Richard Russell made observations during September, 1967, and September, 1968. Short-eared Owls were extremely abundant in 1968--often 4 to 6 could be seen at one time and on one occasion 14 were observed in a small area. During September, 1967, they were not as abundant. Marsh Hawks were very abundant in 1968, especially along coastal areas and willows. One Snowy Owl was observed in 1968 but none in 1967. A Peregrine was seen in 1968, but several were observed in 1967. One Rough-legged Hawk was observed in 1968. Microtines seem more abundant in 1968 and Willow Ptarmigans were very abundant in 1968, but even more abundant in 1967. The Short-eared Owls seem not interested in Ptarmigans, and the Ptarmigans did not take cover when the owls were flying. The Ptarmigans seemed extremely frightened of the Peregrines and would scatter from Marsh Hawks.

Canada, Prince Edward Island. The Fish and Wildlife Division, Prince Edward Island sent in the following report. Although they stated that information on their raptors is very limited they believe that Eagles (no species given), Buteos, and Peregrine Falcons are decreasing from former years during migration, but Snowy Owls seem to be increasing. Accipiter, Kestrel, Merlin, Gyrfalcon and Great-horned Owls are about normal. During the nesting season, Eagles (no species given) one nest found with one young. Buteos are decreasing; Osprey are normal to decreasing; Harriers are normal to increasing; and accipiters, Kestrel, Merlins, Great-horned Owls and others are normal from former years.

GLOSSARY OF FALCONRY TERMS

assembled by Lee Eberly
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[Editors' Note: Since a number of falconry terms have appeared on the pages of *Raptor Research News*, the editors felt a need to clarify their meanings for our non-falconer readers. The list is not intended to be exhaustive or as an endorsement for their use; some obviously are more descriptive than would otherwise be possible, while others serve no useful purpose. We therefore asked Lee Eberly to go through several standard falconry sources and assemble a list for the *News*. Your editors have eliminated some archaic terms and edited some definitions. The main sources used were:

ap Evans, H. 1960. *Falconry for you*. London: John Gifford, Ltd.

Beebe, F. L., and Webster, H. M. 1964. *North American Falconry and Hunting Hawks*. Denver: privately printed.

Mavrogordato, J. G. 1960. *A Hawk for the Bush*. London: Witherby.

Woodford, M. H. 1960. *A Manual of Falconry*. London: Adam and Charles Black.]

accipiter, a member of the genus *Accipiter*; the "short-winged hawks."

aerie, *aiery*, see *eyrie*.

arm, the leg of a hawk from the thigh to the foot; the portion of the leg occupied by the tarso-metatarsus bone.

austringer, (or *astringer*, *ostringer*, *autoursier*), one who keeps and hunts short-winged hawks, particularly Goshawks.

bagged quarry, captive prey which is released under a hawk during training or when game is scarce to insure a flight for the hawk.

bare, (or *bare-faced*), unhooded or not wearing a hood.

bate, *to*, (and *bating*), to beat the wings impatiently, to flutter; an abortive attempt to leave the fist or perch by jumping or flapping the wings but being restrained by the leash or jesses.

beam feathers, the long feathers of a hawk's wing; flight feathers or primaries.

bechins, a tidbit or morsel of food.

bell, a special bell fastened to a hawk, useful for locating when bird is flying free.

bell, to, to fasten a bell to hawk's legs or sometimes tail (Goshawk).

bewit, (or *bewet*), leather strap by which a bell is attached to a hawk's leg.

bind, (and *bind to*), to seize quarry with the feet and hold on, either in the air or on the ground.

blain, an inflammatory swelling or pustule on the surface of the body; on hawks a pustule on the second joint of the wing.

block, a perch used for falcons which usually assumes a cylindrical or inverted cone shape and may or may not be padded.

bow-net, a bow shaped net used for catching hawks.

bow perch, a semicircular perch with ends in the ground, used for short-winged hawks.

bouse, to, (or *bouse, boose, bouze, booze*), to drink; excessive drinking.

box-cadge, a lidless box with padded upper edges to which a hawk is tied during transportation.

braces, leather straps which are an integral part of a hood and used to loosen (strike the hood) or tighten (brace the hood).

brail, a soft leather strap formerly used to secure one wing of a restless hawk to prevent bating; not presently in vogue.

brancher, (or *bowet, bowiser*), a young hawk not able as yet to fly well but which has left the nest.

break into, initial act of eating prey; may or may not be preceded by plucking.

buteo, members of the genus *Buteo*, the soaring hawks or buzzards.

cadge, a wooden, rectangular frame upon which hawks are carried in the field.

cadger, a person who carries a hawk.

calling off, (or to *call off*), a process in exercising or training a hawk when it is encouraged to come or is lured to the fist or lure from a post, perch or assistant.

carry, to, 1) to keep or carry a hawk on the fist to tame or man; 2) to fly with quarry just killed either from the ground at the approach of the falconer or at the outrun of a successful stoop.

cast, two hawks flown together, not necessarily a pair or even of the same species.

cast, to, 1) to hold or wrap a hawk to prevent movement for the purpose of an operation; 2) to eject or disgorge a pellet of undigested feathers, fur, and/or bone, etc., through the mouth.

casting, undigestible portion of a meal which is formed into a pellet and disgorged through the mouth.

cast gorge, to, to vomit or disgorge the contents of the crop or stomach.

cast off, to, to launch a hawk from the fist.

cere, (or *seare, sere*), the waxy yellow skin at the base of the beak in which the nostrils are located.

check, to, to change from pursuing one quarry to another.

clap, the lower part of the beak.

claws, the toes of a "short-wing"; a long-wing has talons.

clean-moulted, end of molt when all of the old feathers are gone and the new set is completely grown.

come to, to begin obeying the falconer.

cope, to, to trim or pare beak, claws, or talons.

cowering, quivering or shaking of the wings in young hawks not in fear but in an attitude of begging for food usually associated with screaming.

corn, a hard lump appearing on the bottom of a hawk's feet causing heat and swelling.

crab, an attack on one hawk by another when flown in a cast.

cramp, a malady most common in eyass short-winged hawks which involves an involuntary contraction of muscles which in severe cases will break bones.

craye, a stoppage of the lower intestine.

creance, a long line or cord attached to the swivel during the first training of a hawk.

crines, (or *crivets*), bristle like hairs around a hawk's eyes or ceres.

croaks, (or *kecks*, *pantas*), archaic names for symptoms of respiratory disorders in hawks and falcons.

crop, a dilation of the esophagus just above the sternum which serves as the immediate receptacle of food before being passed on to the stomach.

crop, put over, process of forcing food from the crop into the stomach accompanied by movement of the neck and shoulders (a hawk *puts over* her *crop*).

crop, put away, conclusion of transferring crop contents to the stomach (a hawk has *put away* her *crop*).

crossing flight, the flight of another bird between a hawk and its quarry possibly causing it to check.

cubital feathers, (or *flags*), the secondary flight feathers next to the primaries of the wing.

deck feathers, the two central feathers of the tail; generally the first to be molted.

droppings, (see *mutes*).

duck hawk, American equivalent of the Peregrine Falcon.

enseame, to, (or *ensayme*), a medieval term meaning to cleanse or purge a bird to rid it of excess fat thus making it more eager to fly.

enter, 1) to fly a hawk at quarry for the first time; 2) to arrange a situation such that a hawk has an easy opportunity to catch a type of quarry new to it.

eyass, (or *eyas*, *eyess*), any raptor taken into captivity as a nestling; bird is always referred to thereafter as an eyass. See also *passager* and *haggard*.

eyrie, (or *aerie*, *aiery*), raptorial nesting place.

falcon, formerly, a female "long-winged" hawk' now generally applies to a member of any species and either sex of the "long-wings" (genus *Falco*) as opposed to the hawks or "short-wings."

falconer, one who trains and flies "long-winged" hawks. The austringer or flier of "short-winged" hawks may also be included in this term.

fault bars, (see *hunger traces*).

feak, to, to wipe the beak briskly back and forth on the perch or glove after feeding to remove food particles.

flags, (see *cubital feathers*).

flight feathers, the primary and secondary feathers of the wing.

foot, to, to seize quarry with the feet.

frounce, a disease of the mouth and throat caused by a protozoan parasite, *Trichomonas galena*.

full-summed, (or *hard-penned*), refers to the completion of moult when all old feathers destined to be replaced are replaced and the new feathers have reached their full length and are no longer soft.

get in, (or *go in*), (see *make in to*).

hack, a process of allowing newly fledged eyass to fly at liberty with purpose of reaching its full power of flight under a simulated natural wild situation (the bird is said to be flown at *hack*).

hack-board, a structure to which food is tied while a bird is being kept at *hack*.

haggard, a raptor which has been trapped as an adult, i.e., one that is in its adult plumage when caught (see also *eyass*, *passage hawk*).

halsband, (or *halstan*), a cord or strap held in the hand and hung around the neck and ahead of the wings of an accipiter which is used to steady the bird for launching the bird rapidly.

hard-penned, (see *full-summed*).

hawk, generally, a diurnal bird of prey: specifically it may refer to the "short-winged" hawks or buteos as contrasted with falcons or "long-winged" hawks.

hawk of the fist, a "short-winged" hawk trained to come directly to the fist.

hawk of the lure, a "long-winged" hawk which has been trained to come to the lure.

high, in good condition or fat.

hood, a leather cap which covers the head and blindfolds the bird thus keeping it calm and quiet.

hood-shy, a trained hawk that avoids and resents being hooded.

hunger traces, (or *hunger streaks*, *fault bars*), weak imperfections appearing as light narrow bands across the webs of growing feathers. May be caused by temporary starvation, incorrect feeding, or nervous stress, or also due to the effects of changes such as light and temperature.

imp, to, to mend a broken feather by adding a new piece. The base portion of the old feather and the new feather portion being held together by a needle.

intermewed, a hawk that has molted in captivity.

jack, a male Merlin.

jerkin, a male Gyrfalcon.

jesses, short leather straps attached permanently to the legs of a raptor.

kechs, (see *croaks*).

leash, a long, narrow, leather strip one end of which is attached to a hawk's jesses via swivels and the other end secured to a block or perch.

long-winged hawks, members of the genus *Falco* having relatively long pointed wings, dark eyes and toothed beaks.

lure, an object which is made of feathers, leather or plastic, etc., and garnished with meat to which the raptor is trained to come for food; means of recall.

made to, indicates that a hawk is thoroughly trained in some aspect, e.g., made to the hood, made to the fist.

mail, the breast feathers of a hawk.

mail, to, to immobilize a hawk by wrapping it up in a sock or piece of cloth in order to perform an operation such as coping or imping.

make in to, slowly and carefully to approach a hawk when she is on her quarry on the ground to take her up.

make hawk, an older more experienced hawk which is flown with an eyass to serve as an example or for encouragement.

man, to, (manning), to accustom a hawk to men, to handling, and to strange sights and sounds.

mantle, to, to spread wings and tail in order to cover food.

mews, place where hawks are kept, originally a place where hawk was kept for molting.

mites, (or *droppings*, *slices*, *slicings*), excrement of a hawk; sometimes restricted to that of the "long-wings" in which case *slicings* or *slices* is used for excrement of the "short-wings"; sometimes restricted to forcibly ejected excreta, *droppings* being used if merely dropped.

nares, nostrils of a hawk.

nestling, a young bird still in the nest; if removed from a nest it is called an eyass.

ostringer, (see *austringer*).

pannel, (or *panel*), the stomach or lower bowel of a hawk, or the part of the alimentary canal of a hawk below the crop.

pantas, (see *croaks*).

passage, the migration of hawks.

passage hawk, (or *passager*), a hawk which has been captured when less than a year old and when migrating or following the passage of migratory prey; always in immature plumage (see also *eyass*, *haggard*).

pelt, the dead body of a bird caught by a hawk.

pendant feathers, those feathers behind the thighs of a hawk.

penned, hard, (see *full-summed*)

perch, a structure upon which a hawk is placed (except a block) when not being flown or carried.

pin and web, an eye disease characterized by a film over the eye.

pitch, the height a falcon attains by first "ringing up" and then maintains by "waiting on."

plume, tuft on top of a hawk's hood.

plume, to, to pluck the feathers from a quarry.

preen, a maintenance activity whereby the feathers are kept in good condition by arranging and oiling by the beak with oil from the oil gland at the top base of the tail.

principals, the two largest feathers of a hawk's wing.

quarry, live prey at which a hawk is flown.

rake, to, to strike quarry without binding to it (see also *ruff, to*).

rake away, act of a hawk's going off on her own (often downwind) instead of doing what the falconer wishes her to do.

rangle, small smooth pebbles given to a hawk; related to the medieval process of enseaming.

reclaim, to, entire process of taming and training of a hawk, more extensive than term *to man*).

refuse, to, to fly at other than the quarry the falconer wishes.

ring up, to, to rise in a spiral.

rouse, simultaneous erection of all the feathers, especially the contour feathers, shaking and then slowly lowering them.

ruff, to, to strike quarry making feathers fly without binding to it (see also *rake, to*).

sails, a hawk's wings.

screamer, an eyass (usually) which calls incessantly, as when begging for food; the calling is a juvenile characteristic carried on into adulthood.

screen perch, a perch with material hanging from it such as canvas or burlap which permits a hawk to climb back up onto the perch after bating off.

seare or sere, see *cere*.

seel, to, to close the eyes by sewing the eyelid shut, a medieval and eastern method.

serve, to, to flush or put up quarry under a hawk.

sharp-set, hungry and ready for food and thus ready to fly and hunt.

short-winged hawk, those hawks (*Buteo*, *Aquila*, *Accipiter*, etc.) with short wings, long tails, yellow eyes, and toothless beaks.

set down, to put a hawk down to moult.

slices, slicings, (see *mutes*).

slip, to, to release a hawk from the fist at quarry.

soar, riding of thermals or updrafts with wings and tail spread and a minimum of wing action.

stoop, (or *swoop*), an attack from above at quarry by folding the wings and dropping at a steep angle.

strike the hood, to, to loosen the braces of a hood thus making it ready to be removed rapidly.

summed, see *full summed*.

swivel, a freely rotating metal device which attaches the leash to the jesses which prevents twisting of the latter.

take up, to, to recover a lost hawk.

talons, claws of a bird of prey, sometimes only those of a "long-winged" hawk, in which case the "short-wings" have claws.

tiercel, (or *tercel*), the male of any of the raptors.

tewel, the lower intestine or bowel of a hawk.

tiring, a tough sinewy portion of a quarry given to a hawk to give it exercise yet little nourishment.

train, 1) the tail of a hawk; 2) a live bird on a line at which a hawk is entered.

truss, to, see *to bind*.

unreclaimed, a wild hawk.

unsummed, the condition of new feathers of a molting hawk which have not hardened.

wait on, to, to circle overhead of the falconer waiting for quarry to be flushed.

wake, to, to keep a new hawk awake thus making it tired and more easily manned.

washed meat, meat which has been deprived of nutritional value by soaking in water and wrung dry.

weather, to, to place a hawk on a perch or block in the open air.

wind up, to, to capture a semi-tamed hawk by entangling her legs in a line as she feeds on food placed out for her; the falconer, with the line, walks in circles around the bird.

yarak, to be in, to be in the state of keenness of a short-winged hawk eager to fly quarry; an expression of oriental origin.

RAPTOR RESEARCH FOUNDATION, INC.

HISTORY AND BACKGROUND

All life on the planet is, and perhaps always has been subjected to stresses caused by environmental changes. Our era seems to be one of accelerated changes due, in no small part, to very rapid expansion of human populations and influences.

That environmental modification by human activities is seriously threatening many species of wildlife is well recognized. High on the list of threatened species are several of our raptors. Recognizing that most wildlife is moving into a period of management by man and that its future will depend upon the efficacy of that management, a group especially interested in birds of prey incorporated Raptor Research Foundation in 1966.

PURPOSE

The Raptor Research Foundation was formed to fulfill a need for facts. There are relatively large areas in the biology of birds of prey in which little or no research has been done. There is strong evidence that some species of raptors are not adjusting to environmental changes and are in serious danger of extinction. It therefore seems imperative that the most efficacious means of quickly gaining the necessary knowledge to avert such extinction be immediately pursued. It is thought that an organizational approach to coordination of efforts is the best means. This approach is the immediate purpose of the Raptor Research Foundation.

STRUCTURE

The Raptor Research Foundation is a non-profit corporation whose purpose is to stimulate, coordinate, direct, and conduct research in the biology and management of birds of prey, and to promote a better public understanding and appreciation of the value of these birds.

The business of the Foundation is conducted by a Board of Directors with the advice of an Advisory Board. This Advisory Board was elected by the Board of Directors in an attempt to bring together all interests in birds of prey. The Advisory Board includes ornithologists specializing in ecology, ethology, taxonomy, physiology, paleontology, parasitology, etc., wildlife managers, veterinarians, and falconers.

ACTIVITIES

Activities which use the name of Raptor Research Foundation must have the prior approval of the Board of Directors.

A major activity to date is the publication of RAPTOR RESEARCH NEWS which appears quarterly. In addition to extensive news on work with raptors, several articles on various types of raptor research have been included.

In order to develop the work of the Foundation, committees have been set up. These are as follows:

1. EDITORIAL COMMITTEE. Editing of RAPTOR RESEARCH NEWS or any other publications.
2. CAPTIVITY BREEDING COMMITTEE. Will coordinate breeding projects of cooperators and issue the B.P.I.E. (Breeding Project Information Exchange), aimed at eventual development of successful breeding techniques.
3. RAPTOR POPULATION COMMITTEE. Will coordinate activities and data of cooperators in various areas to assess changes in raptor populations.
4. RAPTOR BANDING COMMITTEE. To coordinate activities of raptor banders, aid in solution of problems of cooperators, and maintain a liaison with the banding offices.
5. BIO-TELEMETRY COMMITTEE. To exchange information of investigators using this technique.
6. RAPTOR PATHOLOGY COMMITTEE. To assemble information on diseases and injuries and their treatment in raptors.
7. PESTICIDE COMMITTEE. Monitor information on the level of pesticides in raptors and investigate effects of such poisoning.
8. RAPTOR ECOLOGY AND ETHOLOGY COMMITTEE.
9. RAPTOR PHYSIOLOGY and ANATOMY COMMITTEE.
10. RAPTOR TAXONOMY COMMITTEE.
11. EDUCATION AND CONSERVATION COMMITTEE. To collect and distribute information on the preservation of raptors.
12. BIBLIOGRAPHY COMMITTEE. Recording of published references pertinent to raptor research.
13. MEMBERSHIP COMMITTEE. To contact potential members.
14. INTERNATIONAL COORDINATION COMMITTEE. Maintain a liaison with raptor workers on other continents.
15. FINANCE AND INVESTMENT COMMITTEE. Work on the financial support of the Foundation.